195. Peristera afra, (Linnæus).
Columba afra, Linn. Syst. Nat. i. p. 284, (1766).
Rüpp. Syst. Uebers., pl. 38, Buff. Pl. Enl. 160.
Apparently an abundant species on the Camma and Ogobai, and formerly received in Mr. Duchaillu's collections, from the Moonda and Muni. This seems to be the species figured by Rüppell, as above and described by that author and others, as *C. chalcospilos*.

196. Peristera chalcospilos, (Wagler).
Columba chalcospilos, Wagler, Syst. Av. sp. 83, (1827).
Le Vaill Ois. d'Afr. vii., pl. 271.
Two species very nearly allied have been received in Mr. Duchaillu's collection from the Camma. The present bird has the spots on the quills constantly lustrous metallic green, not purple, as in the preceding. It appears to be the species indicated by the Prince Bonaparte, under the name here adopted in Conspectus Avium ii. p. 68, though not agreeing with his description in all particulars.

[To be continued.]

Notes on a Collection of Japanese Fishes, made by Dr. J. Morrow.

BY THEO. GILL.

The collection of Japanese fishes, which it is now proposed to notice, has been submitted to us by Prof. Baird, of the Smithsonian Institution, and was formed during the expedition to Japan, under the command of Commodore Perry. It contains specimens of eighteen species, six of which are believed to be new. All the remaining, with exception of two species, (*Gasterotokeus biaculeatus* of Heckel and *Amphiprion frenatus*, Brevoort,) have been previously described as inhabitants of Japan, by Temminck and Schlegel, in the Ichthyological portion of the Fauna Japonica.

Acanthopterygii Cuv.

Scorpænoidæ Sw., Girard.

Apistinæ Gill.

1. Gymnapistes rubripinnis.
Apistus rubripinnis Tem. and Schl. Fauna Japonica, Pisces, p. 49, pl. xxii. fig. 2.
Apistus rubripinnis Brevoort, Notes on figures of Japanese Fish, p. 10, ib. in Narrative Expedition to Japan, vol. 2, p. 262, pl. vi. fig. 5.
This fish belongs to Swainson's genus Gymnapistes, established for those species of the Apistus of Cuvier which are destitute of scales, and all of whose pectoral rays on each side are counected by the membrane and form a single entire fin.
Swainson has entirely perverted the name of Apistus, or Apistes as it is spelled by him, by applying it to Cuvier's genus Minous, which latter name he has probably abolished on account of its barbarous origin. As the barbarity of a name is not sufficient to authorize such an act, Minous must be restored to the genus for which it was first used, and Apistus may be retained for the first Cuvieran section of the group embraced under that name.

Monocentroidæ Gill.

The peculiar and cavernous nature of the bones of the head and the large osseous shields of the body appear to detach the genus Monocentris from the other families of the Cataphracti.

MONOCENTRINÆ Gill.

2. Monocentris Japonicus.

Monocentris Japonicus Brevoort, Notes on Figures of Jap. Fish, p. 10; ib. in Narrative Expedition to Japan, vol. 2, p. 262, pl. vi. fig. 6.

A single specimen of this fish is in the collection of Dr. Morrow. The figure accompanying the above cited memoir of Mr. Brevoort is a very accurate representation of its form. In spirits, the plates are of a brown brass color, and the interspaces are blackish. The specimen is of the size figured in the plate. Is there more than one species of the genus? or does the young differ in form from the adult?

SCOMBROIDÆ Cuv.

TRICHIURINÆ Bon.

3. Trichiurus Japonicus.

Trichiurus Japonicus Blkr. Verhand. von Batav. Genootschop, vol. 26, Nieuwe Nalez, Ich. Jap., p. 98. 1857.

This species has been fully described by Dr. Bleeker in his recent Memoir on the Fishes of Japan and their geographical distribution. One specimen was obtained by Dr. Morrow.

ECHENEIDOIDÆ Bon.

ECHENEIDINÆ Bon.

4. Echeneis naucrates.

A single specimen of the species identified by Temminck and Schlegel with the Linnæan Echeneis naucrates was obtained by Dr. Morrow. It has twenty-four plates in its disc, and the sides of the caudal fin are posteriorly bordered with white.

GOBIOIDÆ Cuv.

GOBINÆ Bon., Gill.

5. Acanthogobius flavimanus.

Gobius flavimanus Tem. and Schl. Fauna Japonica, Pisces, p. 141, pl. lxxiv. fig. 1.

An individual of this species, five inches in length, was obtained by Dr. Morrow.

6. Rhinogobius similis Gill.—This fish has a great superficial resemblance to Acanthogobius flavimanus, but differs generically in the naked sides of the head and in the normal number of dorsal spines.

The head is as elongated as that of A. flavimanus, but is more gibbous between the eyes and jaws; it forms nearly a quarter of the entire length, inclusive of the caudal. The eyes are moderately large, and are placed midway between the snout and operculum. There are about twenty-eight scales in a lateral row on the side.

$$\text{D vi, } \frac{1}{1}, 7 - \text{A } \frac{1}{1}, 7 - \text{C } 9, 7, 7, 9, \text{ P } 18, \text{V, } 1, 5+5, 1.$$

The color is tawny, punctured with black above, and darker on the profile and operculum, and there is on each side a row of five large dark spots. The second dorsal is irregularly clouded; the other fins are immaculate.

This species would answer quite well to the description of Gobius Pflaumii of Bleeker, were it not for the elongated form of the head. It agrees with that species in the clear fins and in the number of scales on the sides.

The genera to which the two Gobinæ of this catalogue are referred, are fully described in a Memoir on the Gobinæ of the North Pacific Expedition, communicated to the Lyceum of Natural History of New York.

1859.]

LUCIOGOBIUS Gill.

Body naked, elongated and slender, with the height nearly uniform to the caudal fin, anteriorly cylindrical; head depressed, above elongated oval swollen on the sides, and with a central linear depression; eyes widely separated, entirely in the anterior half of the head, small and covered by the skin; mouth nearly horizontal, moderately large and extending under the eyes; teeth pluriserial on the jaw, largest in the external row, not passing to the corner of the mouth; vomer and palatine toothless; tongue large, free and deeply emarginated anteriorly; branchial apertures small, nearly vertical and anterior to the bases of the pectorals; branchiostegals four on each side; dorsal fin nearer the caudal than the head, single and oblong, preceded by one or two simple inarticulated rays; anal opposite the dorsal; caudal rounded; pectorals rounded, with the rays entirely connected by the membrane and with vertical bases; ventrals small, united in a simple infundibuliform basin, and each composed of a spine and five-branched rays; interspinal membrane low; lateral line obsolete.

This is the type of a very distinct tribe of the Gobioids, well characterized by the esociform position of the dorsal and anal fins, and by the very small number of simple rays. In the latter respect, they are represented in the other families of Acanthopterygians by Ophicephalus, Bl., Aphredoderus, Les., Ichthyoscopus, Sw., Aspidophoroides, Lac., Pseudochromis, Rup., &c.

In the form of the head it has a slight resemblance to *Triænophorus*, Gill.

7. L. guttatus Gill.—The body is much elongated and imperceptibly declines to the caudal fin. The height at the pectorals is between a twelfth and thirteenth of the extreme length, and near the caudal, it is rather more than a seventeenth of the same length.

The head is oblong oval above; it forms about two-ninths of the total length; its breadth equals five-ninths of the length, and is twice as great as the height.

The dorsal is situated slightly anteriorly to the sixth-tenth of the extreme length; it is oblong and sustained by two inarticulate and twelve branched rays. The anal is under the dorsal, and has thirteen rays, the first of which is small and inarticulate.

The body is brown, thickly punctured with black; the caudal, dorsal and pectoral fins are also dotted with black.

A single specimen of the length of two inches and a half is in the collection

BLENNOIDÆ Raf.

CENTRONOTINÆ Gill.

8. Centronotus subfrenatus Gill.—This species differs from the previously known Japanese species of the genus C. crassispinnis, (*Gunnellus crassispinnis* Temm. and Schlegel, Fauna Japonica, Pisces, p. 139,) C. nebulosus (*Gunnellus nebulosus*, T. S. l. c.,) and C. dolichogaster (*Gunnellus dolichogaster*, Brevoort,) by the presence of an almost vertical band, margined on each side by purplish-white, which passes from the lower border of the eye to the margin of the preopercle behind the lower jaw. A widely curved band of purplish-white with a row of black dots passes from eye to eye; the convexity of the curve is posterior. The body is reddish-brown with a dorsal band of black, and with a lateral row of large confluent black spots. The fins are immaculate, but the posterior margin of the caudal is white. The dorsal has from seventy-six to seventy nine spines.

Several specimens of this species were obtained by Dr. Morrow, but only one of them is in a good state of preservation.

As the name of Centronotus was given to the Cuvieran Gunnelli before its application to a Scomboroid genus by Lacepede, and subsequently by Mitchell, there is no reason why it should not be retained for the present genus.

[April,

Schneider has well restricted it in the Systema Ichthyologiæ of Bloch,* assigning to it the same essential characters as Cuvier himself.

AULOSTOMATOIDÆ Raf. 1810.

FISTULARIANÆ Bon.

9. Fistularia immaculata Comm.
Two small specimens of this species were obtained at Simoda.

PSEUDOCHROMIDOIDÆ Mull.

PSEUDOCHROMIDINÆ Gill.

10. Cichlops Japonicus Gill.—This species scarcely differs in general form from its congeners, and is very nearly allied to the C. cyclophthalmus of Muller and Troschel. It is chiefly distinguished from that species by the position of the bases of the ventrals, under the lower angles of those of the pectorals. The color is tawny, much darker in the centres of the scales on the back and on the sides above the pectorals. The posterior border of the orbit is margined by a black crescent. The dorsal has a few minute black dots. The membranous margin of the preopercle presents the appearance of being sustained by rays. There are about fifty-two scales in a longitudinal row along the sides.

D ii. 25, A iii. 14, C 6, 9, 8, 5, P 19, V i. 5.

The single specimen in the collection has a length of little more than four inches.

(PHARYNGOGNATHI Mull.)

POMACENTROIDÆ Bon.

POMACENTRINÆ Bon.

11. Pomacentrus dorsalis Gill.—The body is oblong oval, with its abdominal outline more arched than its dorsal. The head is small, and its outline from the nape to the snout is straight. The eye is large and near the profile. The suborbital has a simple, strong tooth directed horizontally backwards, and separated by a semi-elliptical sinus from the body of the bone. The suborbital beneath the eye has also one or two small vertical processes. There are about twenty-five scales in a longitudinal row on the side.

D xiii. 15, A ii. 15, C 3, 9, 8, 3, or 5, 1, 5, 6, 1, 5, P 18, V i. 5.

The color is brown, with one or two obscure bluish dots on each posterior scale of the sides. The operculum and preoperculum have a few more distinct ones, and there is also a distinct black dot at the scapular angle of the operculum. A large black spot, bordered anteriorly by bluish white, is on the posterior rays of the dorsal. There is a black dot at the upper angle of the base of the pectoral. The ventrals are purple; the caudal yellow towards the base.

One specimen is in the collection; its length is nearly three and a half inches.

12. Glyphidodon cœlestinus.—This species does not appear to have been previously found at Japan. Two specimens are in the collection of Dr. Morrow.

The G. smaragdinus Brevoort† appears to be quite distinct from this species, if the figure given in the Notes on Japanese Fish is correctly drawn. It is much

*Corpus gracile, pinna dorsi longitudinalis, tota aculeata: Syst. Ich., Schneid., p. 165, 1801.

† Notes on some figures of Japanese Fish, p. 12, pl. vi. fig. 3; ibid. in Narrative Expedition to Japan, vol. 2, p. 264, pl. vi. fig. 3.

higher than G. cœlestinus, the bands are not as distinct, and the first and last ones of G. cœlestinus are obsolete; it is still more distinguished by the absence of the longitudinal submarginal black bands of the caudal, so distinct in G. cœlestinus. The number of dorsal spines appears to be the same in both species.

AMPHIPRIONINÆ Gill.

13. Amphiprion frenatus Brev.—Notes on figures of Japanese Fish, p. 11, ib. in Narrative Expedition to Japan, vol. 2, p. 263, pl. vi. fig. 4. 1856.

The color of this species, as preserved in alcohol, is very different from that of the living fish. The ground color is tawny. The oblique band behind the eye is purplish white, bordered on each side by black. There are nine spinous rays in the dorsal fin. The groups of radiating opercular ridges terminating in spines, and which are characteristic of the *Amphiprioninæ*, are perfectly distinct, although they are not shown in the above quoted figure.

Two specimens of the species were collected by Dr. Morrow.

LABROIDÆ Cuv.

LABRINÆ Bon.

14. Julis cupido Tem. and Schl.—One specimen is in the collection formed by Dr. Morrow.

15. Halichœres pyrrhogramma.

Julis pyrrhogramma Tem. and Schl., Fauna Japonica, Pisces, p. 170; pl. lxxxvi. fig. 2.

A single specimen is in the collection.

SYNENTOGNATHI Gill.

The abdominal Malacopterygian Pharyngognaths of Dr. Müller do not appear to belong to the same natural order as the Pomacentroids and allied fishes. If the coalescence or separation of the inferior pharyngeal bones is to be esteemed as of ordinal value, the two sections that have been confounded under the name of Pharyngognathi should be at least separated, and regarded as distinct orders. In such a case, the above name may be used to embrace the Exocœti, Scomberesoces, &c. There is so striking a parallelism between the genera of Acanthopterygian Pharyngognaths and the true Acanthopterygians, that a doubt may be even entertained whether the pharyngeals are of really ordinal value in classification. Certain it is, that no less than three genera that actually belong to the Pharyngognathi of Müller, were confounded by Cuvier himself with genera of the Mullerian Acanthopteri, Pterophyllum of Heckel being referred to Platax, Astronotus of Swainson to Lobotes and Amblodon of Rafinesque to Corvina. The connection of those respective genera appears, however, to be one of analogy rather than of affinity.

SCOMBERESOCES Mull.

HEMIRHAMPHINÆ Gill.

16. Hemirhamphus occipitalis Gill.—The height is scarcely contained twelve times in the length from the *upper jaw* to the end of the caudal fin. The head forms nearly a fifth of the same length, and its height is contained between two and two and a half times in its length. The eyes are large, the diameter of an orbit exceeding a fourth of the length of the head, and equalling the interorbital space. The upper jaw is triangular, longer than wide, and acutely rounded; the distance from the middle of its side to the orbit equals an orbit's diameter. The lower jaw, from the corner of the mouth to the tip, is more than a half greater than the length of the head, and forms a fourth of the *extreme* length. The dorsal fin commences between the sixth and seventh of

the length from the upper jaw to the end of the caudal, and is entirely over the anal. The pectorals, when bent forwards, reach at least to the centre of the pupil.

D 13, A 14, &c.

The general color is chocolate brown, with the usual lateral silver band broader between the dorsal and anal. A number of small purplish dots, and a few larger ones, form a triangular area on the occipital region, the apex of which is posterior, and the base emarginated; and from the angles of the base, two bands of spots proceed, and converge anteriorly. Above the orbit there is also a pale bluish area dotted with black.

A single specimen of this species, little more than four inches in length, is in the same collection. The color is much changed, or, at least, is quite distinct from that of most other species of the genus, but resembles more that of *Hemirhamphus Gernærti* of Valenciennes.

It does not agree with the description of any of the known species of the genus. The H. Gernærti Val appears to be its nearest ally, but the beak of that species is said to be the fifth of the total length, and no mention is made of any peculiarity in the coloration of the head. The H. intermedius of Cantor and Richardson differs in the number of rays, in color and in proportions. H. Sajori of Temminck and Schlegel is distinguished by its short beak. In H. japonicus of Brevoort, the anal appears to commence nearly under the middle of the dorsal, and the beak is also shorter. The present appears, therefore, to be undescribed.

LOPHOBRANCHII Cuv.

SYNGNATHOIDÆ Bon.

SOLEGNATHINÆ Gill.

17. Gasterotokeus biaculeatus Heckel.—This species, although widely distributed in the Eastern seas, and common on the Chinese coasts, has not been previously noticed as an inhabitant of Japan. Two specimens were obtained there by Dr. Morrow.

SYNGNATHINÆ Bon.

18. Syngnathus Schlegeli Kaup.

Sygnathus tenuirostris, Tem. and Schl. Fauna Japonica, Pisces, p. 273, pl. cxx. fig. 6, (non Rathke).

Sygnathus Schlegeli Kaup, catalogue Lophobranchii in British Museum, p. 46.

Two specimens of this species are also in the collection of Dr. Morrow.

The paper entitled "Observations upon the relations existing between Food, and the capabilities of men to resist low Temperatures, by I. I. Hayes, M. D.," was, on report of the Committee of the Biological Department, to which it had been referred, recommended to be published in a Medical Journal.

The following resolutions, presented by the Committee on Proceedings, were adopted:

Resolved, That the subscription to the Proceedings after the present year be increased to two dollars.

Resolved, That the Committee appointed to examine papers offered for publication in the Proceedings, be instructed, when it may be deemed expedient, to confer with the Committee on Proceedings, with a view to procure greater condensation of the material to be printed.

In accordance with the first of these resolutions, the recommendation of the Committee on Publication fund, fixing the price of commutation